



Circular Economy: from Indicators and Data to Policy-making

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Introduction



1.1 Aim of the Report

This report aims to map data at national, regional, and global levels, for core Circular Economy (CE) Indicators of the Joint UNECE/OECD Guidelines for measuring circular economy part A: conceptual framework, statistical framework and indicators (United Nations Economic Commission for Europe [UNECE] 2023). The guidelines were developed by a Task Force that was set-up in 2021 to assess the availability and accessibility of circular economy indicators, and was formed by a significant number of international organizations¹, including UNEP, and countries representatives. The members of the Task Force assessed the available information on circular economy, homogenised the concepts and definitions, as well as proposed an aspirational indicators framework that could be used by any country to assess their progress towards shifting to circular economy.

This report also aims to link the usefulness of core indicators in targeted policy-making to advance the shift towards a circular economy and presents country examples of what has been achieved in selected countries.

1.2 Circular Economy Core Indicators

The developed Guidelines contain a list of proposed circular economy indicators. These indicators are divided into three indicators categories, namely core, complementary and contextual indicators. This report focuses on the core set of indicators only.

Core indicators are defined as those indicators that could be used to assess countries advancement in their shift to circular economy, through including key circular economy elements, responding to main policy questions, and highlight possible changes required for further analysis or potential action. The core set is divided into (a) operational indicators, that are highly relevant, already measurable and countries have the willingness to report on in the short or medium term, and

¹ The Task Force was formed of representatives from (alphabetical order) the European Environment Agency, Eurostat, OECD, UNECE, UNEP, and benefited from active contributions from FAO, IMF, UNITAR, UNSD.

(b) aspirational indicators which are highly relevant but are not yet measurable and methodological development are still required. These indicators are classified into multiple themes which in turn are grouped into frameworks, according to Table 1 below. Indicators are presented, in some instances, by more than one sub-indicator or by using a proxy. For instance, material consumption and productivity contains four sub-indicators (domestic material consumption, raw material consumption, material productivity and raw material productivity), while for the following four indicators (total waste generation, national recycling rate, GHG emissions from

production activities and pollutant discharges from production activities to water bodies and share safely treated), proxy indicators are proposed in the methodology considering the unavailability of the initial indicators.

Six indicators are named “placeholders” as these are considered important areas to be assessed as part of the core indicators list, yet no current indicator or proxy is available that represents what is supposed to be measured.

Table 1 Overview of circular economy framework, related themes and the proposed core indicators

Framework	Themes	Proposed core indicators
Material life-cycle and value chain	The material basis of the economy	Material consumption and productivity a. Domestic Material Consumption (DMC) b. Raw Material Consumption (RMC) c. Material productivity d. Raw material productivity
	The circularity of material flows and the management efficiency of materials and waste	Total waste generation Proxy: Municipal waste generation
		Circular material use rate
		National recycling rate Proxy: Municipal waste recycling rate
Interactions with trade	none	
Interactions with the environment	Natural resource implications	Placeholder: Natural resource index/depletion ratios
		Intensity of use of renewable freshwater resources

Framework	Themes	Proposed core indicators
	Environmental quality implications	GHG emissions from production activities Proxy: Total GHG emissions
		Pollutant discharges from material extraction and processing to water bodies and share safely treated Proxy: Total discharges to water bodies and share of total discharges safely treated
	Impacts on human health	Placeholder
Responses and actions	Support circular use of materials, promote recycling markets and optimize design	Taxes and government support for circular economy business models
	Improve the efficiency of waste management and close leakage pathways	Investments in waste management, waste collection and sorting
		Tax rate/tonne landfilled or incinerated
	Boost innovation and orient technological change for more circular material lifecycles	Government and business R&D expenditure on circular economy technologies
	Target setting and planning	Placeholder: distance to targets
	Strengthen financial flows for a circular economy and reduced leakage	Business investment in circular economy activities
	Inform, educate, train	Placeholder
Socio-economic opportunities for a just transition	Market developments and new business models	Gross value added related to circular economy sectors
		Jobs in circular economy sectors
	Trade developments	none
	Skills, awareness, and behavior	Placeholder
	Distributional aspects of circular economy policies	Placeholder

Source: (UNECE 2023) table 3 page 19

Considering that placeholders refer to indicators that are yet to be identified and defined, from the initial list of 21 core indicators, only the 15 core indicators not classified as placeholders are further considered in this report.